The Impact of Institutional Investors in Cross-Border M&A: The Case of European Acquiring Firms

by

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Biographic note

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Abstract

The importance of institutional investors has been increasing exponentially around the world, year after year, in several aspects of a firm's decision making. Considering that mergers and acquisitions are a major investment decision for any firm, it can be expected that institutional investors have an important influence on such decisions. The aim of this study is to analyze the impact of this type of investors on the probability of European firms engaging in cross-border mergers and acquisitions as acquiring firms. The existing studies on this topic focus mainly in the United States and in the United Kingdom and the present study tries to complement these researches by extending the evidence to other geographic areas, thus contributing to a more complete literature on the subject. In this study, a sample enclosing a 10-year period and spanning across 13 different countries is employed, putting an emphasis on the diversity of the geographic areas covered. The findings of this investigation reveal that the presence of institutional investors, particularly foreign institutional investors, increases the likelihood of a firm acquiring a foreign firm instead of a domestic firm while the largest institutional shareholder is averse to cross-border deals. This research sheds new light on the activism of institutional shareholders regarding cross-border mergers and acquisitions in Europe.

Key-words: Institutional Investors; Shareholder Activism; Corporate Governance; Mergers and Acquisitions; Cross-Border; Europe

JEL Classification: G15, G23, G32, G34

Resumo

A importância dos investidores institucionais tem aumentado exponencialmente em todo o mundo, ano após ano, em vários aspetos das decisões empresariais. Considerando que as fusões e aquisições são uma decisão de investimento importante, é expectável que os investidores institucionais tenham uma grande influência nesse tipo de decisões. O objectivo deste estudo é analisar o impacto deste tipo de investidores na probabilidade de uma empresa Europeia iniciar uma fusão ou aquisição transfronteiriça como adquirente. Os estudos existentes acerca deste tópico concentram-se sobretudo nos Estados Unidos e no Reino Unido, sendo que este estudo procura complementar a pesquisa existente ao alargar as evidências a outras áreas geográficas, contribuindo assim para uma literatura mais completa acerca deste tópico. Nesta investigação, é utilizada uma amostra que engloba um período de 10 anos e que inclui 13 países diferentes, enfatizando assim a diversidade de áreas geográficas abrangidas. Os resultados obtidos demonstram que a presença de investidores institucionais na estrutura acionista de uma empresa, em particular investidores estrangeiros, aumentam a probabilidade de uma empresa adquirir um alvo estrangeiro em vez de um alvo doméstico enquanto o maior investidor institucional demonstra aversão a este tipo de suões ou aquisições. Esta investigação fornece novas evidências relativamente ao ativismo accionista no que refere às fusões e aquisições transfronteiriças na Europa.

Palavras-Chave: Investidores Institucionais; Ativismo Acionista; Governo Empresarial; Fusões e Aquisições; Transfronteiriço; Europa

Códigos JEL: G15, G23, G32, G34

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Glossary

AT – Austria

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ES – Spain

FI – Finland

FR – France

GR – Greece

IE – Ireland

IT – Italy

LU – Luxembourg

M&A – Mergers and Acquisitions

NL – Netherlands

PT – Portugal

SI – Slovenia

1. Introduction

In recent years, mergers and acquisitions have, once again, garnered a huge deal of attention, with a considerable amount of deal making activity and the emergence of several mega-deals, which have led many people to believe that we are currently in the middle of a new peak in merger activity. According to Baker & McKenzie (2016), the year of 2015 has established itself as a record-breaking year for cross-border mergers and acquisitions post-financial crisis. The overall mergers and acquisitions value in 2015 reached USD 4.28 trillion, of which 39% corresponded to cross-border deals, which amounts to a value of USD 1.66 trillion.

Furthermore, there has been an astonishing expansion of the importance of institutional investors since the start of the millennium. In 2015, according to The Boston Consulting Group (2016), the global assets under management totaled to an amount of US$71.4 trillion, a figure approximately 2.5 times higher than the one registered in 2002, which was US$29 trillion.

Given the increasing amounts of investments these institutional shareholders are responsible for, it is reasonable to believe they can have a major impact on mergers and acquisitions, especially taking into account the deal making activity in the last few years. In fact, mergers and acquisitions are a good setting to study the influence of institutional shareholders because an acquisition is an important investment decision likely to impact the shareholder value of the bidding firm (Gaspar et al., 2005). Thus, this study aims to understand the impact of institutional investors in mergers and acquisitions.

Considering that there are a number of studies that focus on this subject in the U.S., in the U.K. and in China, this study will focus on Europe, a geographic area that has not received so much attention as the areas mentioned above. Moreover, Europe is an ideal venue for studying the importance of corporate governance in M&A given the large number of closely held firms and the wide range of ownership structures, corporate governance rules, corporate laws, securities regulations, and capital market conditions (Faccio and Masulis, 2005).

Particularly, this study will provide an answer to the following research question: "Does the presence of institutional investors in acquiring firms lead to a higher probability of engaging in cross-border mergers and acquisitions?"

The objective of the study will be achieved following the same methods employed by one of the similar studies (Andriosopoulos and Yang, 2015), which will be addressed with more detail both in the literature review and in the methodology sections.

Besides this section, this report is structured as follows: in chapter 2, a literature review of the topic is made. The third chapter describes the development of the research hypothesis. Chapter 4 describes the data and the methodological choices. In chapter 5, the results obtained and its analysis are presented. In the sixth and final chapter, the findings are discussed and suggestions for further research are made.

2. Literature Review

In this chapter, a literature review of the topic is presented. First, the most relevant definitions of the study are presented. Next, the main theories are addressed, which are followed by the analysis of similar studies.

2.1. Relevant Definitions

In order to provide a better understanding of the research topic, it is fundamental to present some relevant definitions, which are mentioned several times throughout the literature review. A synthesis of the definitions can be viewed in the following table.

Table 1 – Relevant Definitions Summary

Definitions	Topics	Authors
Institutional Investors	Definition	Davis and Steil (2004)
	Different Types	Davis and Steil (2004) Bodie et al. (2014)
Effective Monitoring	Separation of Control	Fama (1980)
	Definition	Schleifer and Vishny (1986)
Shareholder Activism	Different Definitions	Black (1990); (1998) Smith (1996) Gillan and Starks (1998) Hernández-López (2003)

The table presents the most relevant definitions used throughout the literature review.
Source: Own Source

Institutional investors may be defined as specialized financial institutions that manage savings collectively on behalf of small investors, towards a specific objective. They provide a form of risk pooling for small investors with a better trade-off of risk and return than they could attain by investing individually. Given their large size, institutional investors take advantage of economies of scale, such as the possibility of transacting assets in large volumes, which result in lower average costs and lower commission charges for investors and savings in advisory fees. Considerable

countervailing power[1] also results from size, which may be used to reduce transaction costs and custodial fees, besides giving the possibility of ensuring fair treatment by capital market intermediaries and the potential for improved control over invested companies (Davis and Steil, 2004). Among institutional investors, it is possible to identify several types of investors, namely unit investment trusts, pension funds, life insurance companies, mutual funds and hedge funds (Bodie et al., 2014, Davis and Steil, 2004).

Fama (1980) advanced that the separation of security ownership and control can be an efficient form of economic organization and concludes that the firm is disciplined by competition from other firms, which forces the evolution of devices for efficiently monitoring the performance of the firm. The notion of effective monitoring skills was then postulated by Schleifer and Vishny (1986), who argue that institutional investors, due to their professional skills, abundant capital and motivation to maximize shareholder value, have the incentive to monitor and supervise the management of the companies in which they are shareholders, in order to overcome agency problems.

One of the first definitions of shareholder activism was provided by Black (1990). He presents a broad definition and refers to it as any formal or informal effort to monitor corporate managers or to communicate a desire for change in a company's management or policies. On a subsequent paper, he refers to shareholder activism as proactive efforts to change firm behavior or governance rules (Black, 1998). Another definition that should be noticed is from Smith (1996), who says that the monitoring and the attempts to produce changes in the organizational structure of firms not perceived to be pursuits to maximize shareholder wealth constitute shareholder activism. Gillan and Starks (1998) posit that shareholder activism can be viewed as an investor who tries to change the status quo through "voice", without a change in control of the firm. They add that the referred "voice" can take the form of shareholder proposals, direct negotiations with management and public targeting of corporations. Furthermore, Hernández-López (2003) refers to shareholder activism as any action a shareholder may take, based on his rights as a shareholder, with the objective of influencing the firm management.

[1] Countervailing power: balancing of the market power of one group by that of another group (Business Dictionary, 2016).

2.2. Main Theories

2.2.1. Determinants of Cross-Border M&A

Cross-border mergers and acquisitions are affected by several economic and institutional factors. One of the first studies to devote to the determinants of cross-border acquisitions is from Rossi and Volpin (2004), who focus on the differences in laws and regulation across countries. They find that target firms are typically from countries with poorer investor protection than the countries of the acquiring firms, which suggests that cross-border deals have an important corporate governance component, as they improve the degree of investor protection within target firms.

Goergen and Renneboog (2004) show that cross-border acquisitions trigger higher wealth effects than domestic acquisitions, as acquirers pay a lower premium in foreign deals and this effect is more pronounced as the acquirer possesses better corporate governance standards.

Di Giovanni (2005) demonstrates that the domestic financial conditions are crucial in determining the acquisition of companies abroad. He shows that firms in countries with developed stock markets are more prone to acquire abroad whereas geographical distance is negatively associated with cross-border M&A.

Further evidence is provided by Bris and Cabolis (2008), who point that the better the shareholder protection and accounting standards in the acquirer's country, the higher the merger premium in cross-border deals related to domestic deals.

Moreover, Chari et al. (2010) document that when a firm from a developed country acquires an emerging market firm, there is an economically large increase in the acquiring firm's stock price.

Erel et al. (2012) show that firms in countries whose stock market has increased in value, whose currency has recently appreciated, and that have a relatively high market value tend to be purchasers, while firms from weaker-performing economies tend to be targets.

Furthermore, Starks and Wei (2013) provide evidence that, for cross-border mergers, the takeover premiums are negatively associated with the bidding firm's home country shareholder protection. Correspondingly, the abnormal returns to the bidding firm stockholders are positively related to the quality of their home country corporate governance standards.

In summary, this strand of the literature suggests that geographical proximity, financial development and, most significantly, corporate governance are important determinants of cross-border M&A. Considering that institutional investors are relevant on the corporate governance activities of a firm, it is logical that institutional investors may also be an important determinant of cross-border M&A.

2.2.2. Efficacy of Shareholder Activism

Indeed, supporting the notion that institutional investors have an important role on the firm's corporate governance and decision making, there are several studies which provide evidence that shareholder activism is an efficient mechanism of firm monitoring.

Smith (1996) provides evidence that shareholder activism is largely successful in changing corporate governance structures of targeted firms and these changes lead to an increase in shareholder wealth.

Del Guercio and Hawkins (1999) conclude that, in fact, institutional investors bear a capacity to exert influence over the corporate management. They examine the impact and motivation of shareholder proposals by institutional investors and find that these proposals are followed by significant corporate governance activity and are effective in promoting changes in the companies.

In a similar study, Gillan and Starks (2000) showed that shareholder proposals made by individual investors garner fewer votes than shareholder proposals made by institutional investors, which receive significantly more votes, providing a stronger basis to influence the firm's management. In a different study, the same authors (Gillan and Starks, 2003) find that institutional investors may play a major role in influencing the

corporate governance of firms because they increase the liquidity, volatility, and price information of the markets in which they invest, which will result in better monitoring and, consequently, better corporate governance of the companies.

Hartzell and Starks (2003) document that the presence of concentrated institutional ownership is positively related with pay-for-performance sensitivity of managerial compensation and negatively related to the level of such compensation, which implies that institutional monitoring mitigates the agency problem between managers and shareholders.

Furthermore, Brav et al. (2008) state that informed shareholder monitoring can reduce agency costs in invested firms and the presence of institutional investors leads to a disciplinary pressure on the management of public firms to make shareholder value a priority, which shows that large institutional investors possess the ability to enhance the value of their investments.

Klein and Zur (2009) examine activism campaigns by hedge funds and conclude that these shareholders are extremely successful in leading a firm's management to accept their demands. Renneboog and Szilagyi (2011) also provide evidence that shareholder proposals made by institutional investors are a useful device in monitoring firms with exacerbated agency problems.

Aggarwal et al. (2011) demonstrate that monitoring by institutional shareholders has a direct effect on corporate governance, functioning as a disciplinary mechanism against poorly performing CEOs.

Cuñat et al. (2012) provide evidence that accepted shareholder proposals initiated by institutional shareholders have a positive impact on the firm's stock price and this reaction is larger in firms with more antitakeover provisions, higher institutional ownership and stronger investor activism.

Aggarwal et al. (2015) document that, in the case of an upcoming proxy voting process, institutional investors restrict share lending and recall their loaned shares in order to vote and this effect is associated with less support for management proposals and more support for shareholder proposals, which suggests that the votes of institutional

investors are an effective mechanism of corporate governance. This effect is higher for firms with a higher proportion of investors with strong incentives to monitor.

Considering that most of the prior research had been conducted in the U.S., Iliev et al. (2015) extend the evidence to a large-scale sample of countries from Europe, Asia, South America and Africa and demonstrate that the use of voting to engage in shareholder activism provides an efficient monitoring process in firms all around the world.

Boone and White (2015) examine the effects of institutional ownership on the firms' information and trading environment and conclude that higher institutional ownership is associated with greater management disclosure, analyst following, and liquidity, resulting in lower information asymmetry. The institutional investors' predilection for low information asymmetry facilitates information production, enhancing monitoring.

Ying and Yawen (2016) provide evidence that both exit and voting against management are important governance mechanisms when institutional shareholders are dissatisfied with the company's management, even if voting is more a prominent mechanism. Moreover, funds with smaller ownership blocks and shorter investment horizons are more likely to exit, and funds are more likely to exit small, liquid firms with greater insider ownership.

Finally, Denes et al. (2017) conduct an extensive survey on shareholder activism and draw two important conclusions: first, shareholder activism has a major impact on a firm's corporate governance; second, shareholder activism has become more value increasing over time, which suggests activists have learned and adapted their strategies over time, particularly through the development of hedge fund activism.

2.2.3. Shareholder Activism Limitations

Nonetheless, there are some opposing views. Most of the critiques to the theory of shareholder activism constituting an efficient mechanism of firm monitoring focus on the high monitoring costs, which suggests that only institutional investors who have a considerable size and possess a high stake in the firm may act as activists.

Lipton and Rosenblum (1991) argue that the lack of information, time and expertise of institutional investors often limits the capability to monitor a firm's management.

Maug (1998) demonstrates that, if stock markets are less liquid, large shareholders will engage in less monitoring because they are not able to cover the monitoring costs through informed trading.

Kahn and Winton (1998) expose that a higher ownership stake increases the institution's desire to intervene and the threshold at which the intervention becomes attractive varies with the sign and size of the trading impact of the intervention.

Karpoff (2001) summarizes that shareholder activism creates little value and is not associated with subsequent significant changes in the corporate governance of firms.

Parrino et al. (2003) find that institutional investors which are more concerned about holding prudent securities prefer to sell shares when they are unhappy with firm performance instead of exerting efforts to monitor management.

Tihanyi et al. (2003) argue that the different types of institutional investors may not equally have the same interests because of increased risks and organizational complexity.

Gillan and Starks (2003) underline that only shareholders with large positions are likely to earn a return on their investments that is large enough to justify the monitoring costs involved when engaging in shareholder activism.

Bebchuk (2007) highlights that activist shareholders often face significant costs, high levels of uncertainty and staggered boards, all of which block activism.

Becht et al. (2010) study the effects of shareholder activism by a specific fund, the Hermes UK Focus Fund, and even though they report substantial benefits, these are attained primarily through private interventions, a sort of action that may not be accessible for all institutional investors, particularly for smaller investors.

Levit and Malenko (2011) show that nonbinding shareholder proposals can be effective only if there is a threat of a proxy fight by an activist investor and if the conflict of interest between the activist and the other shareholders is sufficiently large. Their study

also suggests that the efforts and costs along with fear of managerial retaliation might deter activist investors from submitting proposals and the tradeoff between these costs and the expected benefits varies across shareholders depending on their holdings in the company, their private information and their preferences.

Gantchev (2013) measures the costs of activist monitoring and provides cost benchmarks for evaluating the net returns to activism. His findings suggest that monitoring costs play a major role in the institutional investors' decisions, as these costs reduce the activist mean abnormal activist return by two-thirds and only the top quartile of activists earns higher returns on their activist investments.

Mori and Ikeda (2015) demonstrate that, in order to become a monitor, a shareholder must win the majority support of other shareholders. To obtain this majority, a dividend-seeking shareholder might have an incentive to propose lower dividends than the tax-optimum, providing an unprofitable monitoring activity as long as the private benefits of tax-saving are greater than the pecuniary loss from the monitoring activity.

Norli et al. (2015) show that shareholder's incentives to intervene as monitors are weakened by high costs of activism, particularly when the firms' stocks are not liquid.

McCahery et al. (2016) document that there are several constraints for institutional investors to engage in shareholder activism, particularly liquidity concerns, as investors that are less concerned with stock liquidity intervene more intensively. Moreover, the effectiveness of exit threats is dependent on the ownership stake size and whether other large shareholders are also present.

2.2.4. Pressure-Resistant Institutional Investors

Given the several types of institutional investors and evidences that not all institutions monitor the invested firm's management, Brickley et al. (1988) propose that institutions should be divided upon three mutually exclusive categories, based on their susceptibility to management influence: pressure-sensitive institutions, pressure resistant institutions and pressure indeterminate institutions. They find that pressure resistant institutions, that are free of conflicts of interest (in which mutual funds and

public pension funds are included), are more likely to influence the management of firms and proceed as active monitors than pressure-sensitive institutions (in which insurance companies and trusts can be identified), who do not want to risk losing their business relationships with the investee firms and thus, have a more passive attitude.

The following studies opt to divide institutions in two categories instead of three, by joining in the same category the pressure-sensitive institutions and the pressure indeterminate institutions. Almazan et al. (2005) demonstrate that pressure resistant institutions can provide a more intense monitoring of corporate management than other types of investors, more specifically on executive pay and compensation.

Chen et al. (2007) argue that only pressure resistant institutions specialize in monitoring and influencing efforts while other institutions simply do not monitor. Furthermore, these pressure resistant institutions focus on monitoring rather than trading for profit.

Cornett et al. (2007) find a significant relationship between a firm's operating cash flow returns and institutional ownership but only for the pressure resistant institutions, which are less likely to have a business relationship with the firm and state that these investors are better suited to monitor and discipline the firm's management, unlike pressure-sensitive institutions, whose interests in maintaining business relations with the firm compromise them as effective monitors.

Ferreira and Matos (2008) show that, among pressure resistant institutions, we can find the foreign institutional investors. Foreigners are effective monitors because, since they belong to a different country, they are much less likely to have business relations with the invested firms than domestic institutional investors. Thus, foreign institutional investors are more capable of wielding pressure on the firm's management and enhance shareholder value.

As for Elyasiani and Jia (2010), they find that pressure resistant institutions have a larger effect on firm performance than pressure-sensitive institutions, namely on decreasing information asymmetry and increased incentive-based compensation, which leads to a more effective monitoring.

2.2.5. Foreign vs. Domestic Institutional Investors

The argument that foreign institutional investors are effective monitors of a firm's management is, however, not entirely consensual, as the performance of foreign investors compared to domestic investors has presented mixed evidence. For a long time, the consensus among academics and researchers was that domestic investors have advantages over foreign investors in trading stocks in their own countries.

Shukla and van Inwegen (1995) compare the performance of UK mutual funds and US mutual funds which invest in US portfolios and find that UK funds perform worse than the US domestic funds mainly because of informational disadvantages.

Kang and Stulz (1997) investigate stock ownership in Japanese firms and find evidence that foreign institutional investors hold portfolios with higher volatility but, even so, are not able to outperform the market portfolio because they don't have access to the same information as domestic investors.

Coval and Moskowitz (2001), using U.S. data, identify a strong geographic link between mutual fund investment and performance. They document that mutual fund managers have a better performance and earn substantial abnormal returns when they select stocks of firms that are geographically closer to them than when they select stocks of firms more distant to their location. They suggest that this performance is a compensation for the improved monitor capabilities or access to private information from firms geographically proximate to them.

Choe et al. (2005) show that, in Korea, foreign investors pay more when they buy shares and receive less when they sell them than domestic investors due to information disadvantages.

Using transaction data from the Indonesian stock market, Dvořák (2005) investigates whether foreign or domestic institutional investors have an information advantage and concludes that, in fact, domestic investors possess an information advantage.

Leuz et al. (2009) show that foreign investors invest less in firms that reside in countries with poor outsider protection and disclosure and have ownership structures that are

conducive to governance problems mainly due to the monitoring costs and information asymmetry foreign investors face.

Despite the evidence presented above, Grinblatt and Keloharju (2000) find that, in Finland, foreign institutional investors are more sophisticated than domestic institutional investors, being able to obtain a better selection of stocks and outperform the domestic portfolios.

Froot et al. (2001) show that international portfolio inflows have a positive relation with the invested firms' stock returns, which suggests the market views the presence of foreign institutional investors as a positive signal.

In the aforementioned article, Dvořák (2005) highlights that, in defiance of their conclusions, some foreign institutions, due to their expertise and experience, may have access to better information than other foreign institutions, delivering a superior performance.

Froot and Ramadorai (2008) document a positive relationship of cross-border equity flows to price and net asset value returns, suggesting that informational advantages are responsible for the observed predictability.

Chen et al. (2009), using an intraday transaction dataset from Taiwan, show that, given access to the same information, foreign investors outperform domestic investors, earning large positive abnormal returns and conclude that foreign investors are more sophisticated when it comes to interpreting information.

Moreover, Huang and Shiu (2009) analyze the effects of foreign equity ownership in Taiwan and their results divulge a pronounced foreign ownership effect, as firms with high foreign institutional ownership outperform firms with low institutional ownership.

Aggarwal et al. (2011) conclude that monitoring and activism by foreign institutional investors lead to better firm performances than local institutional investors can obtain, due to their independence from local corporate managers.

Ozkan (2012) demonstrates that, in the post-acquisition period, domestic institutional shareholders do not play a significant role in determining the level of CEO pay during

the year following an acquisition, while foreign institutional shareholders have a significant influence in it.

A more recent research, from Huang and Zhu (2015), suggests that involving foreign institutional investors in corporate governance practices can significantly reduce expropriation by controlling shareholders.

Kim et al. (2016) try to reconcile the conflicting evidence on the performance of domestic investors against foreign investors. They find that in aggregate, domestic, but not foreign, institutional ownership is negatively related to the extent of earnings management. Additionally, domestic institutional ownership becomes more negatively linked to earnings management relative to foreign institutional ownership when proximity to information becomes more important as measured by information asymmetry around the investee firms. As foreign institutional investors become more familiar with the host country's accounting practices and culture, they become as effective as domestic institutional investors in constraining earnings management. When they isolate conditions under which the comparative monitoring advantage of foreign institutions likely work to a greater effect, they also find evidence that ownership by foreign institutional investors located in the same geographic region as the investee firms is more negatively related to earnings management than domestic institutional ownership; foreign institutional ownership is significantly and negatively related to earnings management in firms with higher, but not lower, levels of free cash flow; and ownership of foreign institutional investors from developed countries is significantly and negatively related to earnings management in emerging countries.

2.3. Similar (Relevant) Studies

The topic of institutional investors and M&A has garnered a great deal of attention, which can be verified by the several existing studies (namely regarding the U.S.).

Stulz et al. (1990) provide evidence that, in a sample of successful tender offers, the target's share of the total takeover gains increases with target managerial ownership and decreases with institutional ownership.

Ambrose and Megginson (1992) report that the absolute levels of institutional shareholdings do not have any influence on the probability of receiveing a takeover bid but the net change in institutional shareholdings in the quarter of the year before the takeover bid is negatively related to the probability of receiveing a takeover bid.

The method of financing in corporate acquisitions is also affected by the presence of institutional investors, as Martin (1996) exhibits. According to his study, the likelihood of financing an acquisition with shares increases significantly with higher institutional shareholdings.

Gaspar et al. (2005) show that target firms with short-term institutional shareholders are more likely to receive an acquisition bid but get lower premiums and bidder firms with short-term shareholders experience significant worse bnormal returns around the merger announcement as well as a higher long-run underperformance.

Qiu (2006) shows that the presence of large pension funds as institutional shareholders has a substantial effect in diminishing value-reducing M&A activity and, when firms with large public pension fund presence do acquire other firms, they perform relatively better in the long-run.

Chen et al. (2007) document that only concentrated holdings by institutional shareholders are related to post-merger performance and that the presence of these institutions makes withdrawal of bad bids more likely.

Matvos and Ostrovsky (2008) propose that institutional shareholdings do not lose money around public merger announcements because they hold substantial stakes in the targets and compensate the losses from the acquiring firm with the gains from the target firm, which possibly gives rise to conflicts of interest. However, Harford et al. (2011) investigate this cross-holding hypothesis and conclude that the majority of institutional shareholders in bidder firms have no investment whatsoever in target firms, which proves that cross-holdings do not explain value-reducing acquisitions.

Massa and Xu (2013) show that liquid firms are bought more often by firms with high institutional ownership and these deals are associated with higher premiums and higher announcement returns for the target firms.

Nain and Yao (2013) provide evidence that more skilled mutual funds hold shares of companies that make more successful acquisitions and these firms have higher probabilities of engaging in further acquisitions.

Roosenboom et al. (2014) find that firms with lower stock liquidity have higher acquirer gains for takeovers of private targets and this relationship is stronger if the threat of exit by institutional shareholders is weak.

Fich et al. (2015) establish that the presence of monitoring institutional investors in target firms is associated with a higher probability of deal completion, a higher bid premium, a higher probability that the bid is revised upwards and also a lower acquirer return.

However, these studies focus on particular aspects of how institutional investors affect the corporate governance of a firm and its impact on M&A but do not investigate their impact on the likelihood of engaging in cross-border M&A.

Ferreira et al. (2010) complement these studies with a comprehensive research on the role of institutional investors in M&A around the world. Particularly, they investigate if the presence of foreign investors as shareholders of corporations makes takeovers by foreign bidders less necessary and if the presence of foreign institutional shareholders facilitates cross-border M&A. Even though they utilize a worlwide sample, the vast majoirity of deals it contains belongs to the United States. They provide evidence that international investments by institutional money managers facilitates cross-border M&A and helps to reduce the bargaining and transaction costs associated with the deals and this effect is stronger when legal institutions are weaker, capital markets are less developed, and information asymmetry and private benefits of control are higher. They also show that firms with more foreign institutional ownership experience significantly lower announcement abnormal stock returns. They conclude that companies who wish to engage in M&A benefit from the presence of institutional investors, as they facilitate these deals.

The same effects are also verified in other countries. Bena and Li (2013) document, for a sample of 32 European countries, that both individual(s)/family and government owners are negatively associated with the incidence of cross-border M&A, while the

foreign domicile of target owners is positively associated with the incidence of cross-border M&A.

Andriosopoulos and Yang (2015) document that, for the United Kingdom, the high level of total institutional ownership is positively related to cross-border M&A deals, full control acquisitions and large M&A deals, which suggests that institutional ownership concentration can help protect shareholders' interests, particularly in cross-border deals where lower shareholder protection may apply.

In China, Zhou et al. (2016) present similar results. They provide evidence that an overseas acquisition attempt undertaken by an acquiring firm with greater institutional ownership is more likely to succeed and this relation is more proeminent when the acquisition is exposed to inferior institutional context.

3. Hypothesis Development

In this chapter, the research hypotheses of this study are introduced. The development of the research hypotheses is made based on a critical analysis of the literature review and on the main theories addressed on it. These research hypotheses form the basis of this investigation.

The literature review starts with the description of the major determinants of cross-border mergers and acquisitions. Alongside geographical proximity and financial development, corporate governance is one of the major determinants of cross-border deals, which suggests that institutional investors may also be a major factor in foreign acquisitions.

Supporting the notion that institutional investors are an important agent of the corporate governance of a firm, there are several studies which conclude that shareholder activism leads to an effective monitoring of the management of the firms, namely through shareholder proposals, disciplinary actions of the management (such as management compensations) and voting processes. Considering that the decision to acquire another firm has an important corporate governance component, it is expectable that institutional investors have an impact on such decisions. Hence, the first research hypothesis is:

H1: The probability of engaging in cross-border M&A is influenced by a greater concentration of total institutional ownership.

Notwithstanding the strand of the literature mentioned above, several authors argue that shareholder activism is not efficient, particularly because there are several different types of institutional investors and all of them have different objectives and capabilities. The main conclusions that are drawn from these theories are that monitoring costs are very high and typically, the monitoring efforts will be effective only if the investor has a large stake on the firm. As such, it can be expected that a larger institutional investor has a bigger influence on the decision to acquire another company. Consequently, the second research hypothesis is:

H2: The probability of a firm engaging in cross-border M&A is affected by the size of the ownership stake of the largest institutional investor.

Taking these findings into account, some authors investigate the effectiveness of influencing the management of a firm by dividing the institutional investors into distinct categories regarding their alignment with the management. Indeed, the evidence points to the existence of some institutions who cannot act as monitors (pressure-sensitive institutional investors) whereas other institutions can be effective monitors (pressure-insensitive institutional investors), namely because these tend to have a more independent position in the firms. Accordingly, the third research hypothesis is:

H3: The probability of a firm engaging in cross-border M&A is influenced by a greater concentration of pressure-resistant institutional investors.

Part of these authors state that foreign institutional investors are among the group of pressure-insensitive institutional investors, arguing that they tend to have fewer business relations with the firms they invest in because they are situated in a different country. Even so, it is important to acknowledge if foreign institutional investors have, in fact, better performances than domestic investors. The literature on this topic provides us mixed evidences, with some authors arguing that domestic investors have informational advantages and thus, are better than foreigners; while other authors believe foreign investors are better because they are more sophisticated investors. One of the most important conclusions from this debate seems to be that, when domestic and foreign investors possess the same information, foreign investors outperform domestic investors. Therefore, the fourth and last research hypothesis is:

H4: The probability of a firm engaging in cross-border M&A is influenced by a greater concentration of foreign institutional ownership.

Regarding the impact of institutional investors in M&A, most studies point to significant impacts on bid premiums and announcement returns. Nonetheless, there are not many studies which focus solely on the likelihood of engaging in these deals and their success.

The studies that focus on the impact of institutional investors on the probability to engage in cross-border M&A point to a significant and positive impact of institutional investors. Still, none of the existing studies focuses solely in a European sample of acquiring firms, which constitutes the literature gap that will be addressed in this study. A summary of the developed hypothesis can be seen in table 2.

Table 2 – Hypotheses Summary

Hypothesis	Determinant	Expected relation with likelihood of engaging in cross-border M&A
H1	Total Institutional Ownership	Positive/Negative
H2	Largest Institutional Investor	Positive/Negative
H3	Pressure-Resistant Institutional Ownership	Positive
H4	Foreign Institutional Ownership	Positive/Negative

4. Data and Methodology

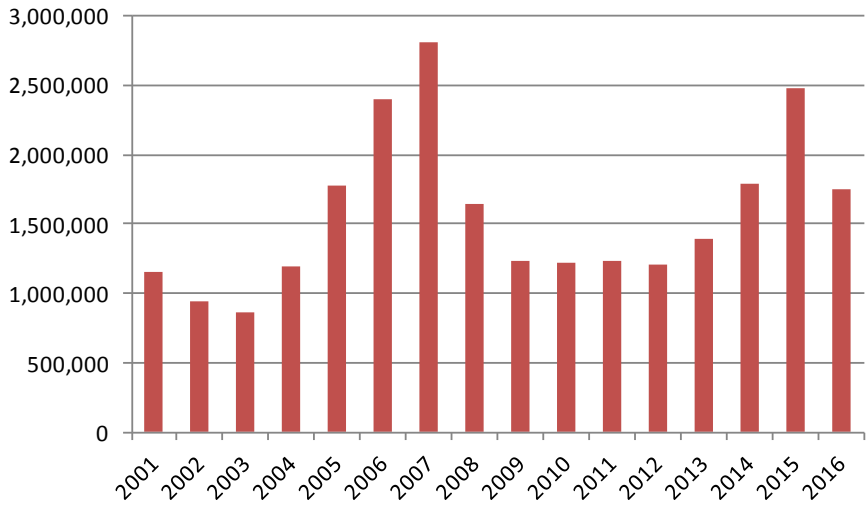
In this chapter, a comprehensive description of the methodological aspects is presented. First, the choice of the countries and the time period employed in the study is justified. Following that, the data collection process is described. The subsequent section explains the choice of the variables included in the study. The posterior section presents the descriptive statistics of the sample. The final section describes the methodology.

4.1. Choice of Countries and Time Period

Martynova and Renneboog (2008), in an extensive survey of the literature, compiled findings for M&A and confirmed that M&A occur in waves. In that sense, the reasoning behind the choice of the time period in this study was to comprise a full M&A cycle.

As Alexandridis et al. (2017) note, global M&A activity remained upbeat during the post-financial crisis recovery, with a new wave of deals emerging in 2009 and peaking in 2015, a landmark year for global M&A activity in which several megadeals emerged and the total deal value surpassed the previous record set in 2007. The following graph shows the total value of M&A occurred in Europe since 2001.

Figure 1 – M&A Aggregate Value in Europe



The figure exhibits the total value of all completed M&A deals occurred in all European countries, in the period from 2001 to 2016. Source: Zephyr Database

It is possible to see that, after the financial crisis, M&A activity in Europe retreated significantly and remained steady until 2012. In 2013, the activity level started to increase, peaking in 2015, and starting to decrease in 2016, which corresponds to the latest wave identified by Alexandridis et al. (2017).

Thus, in order to include the latest trends in M&A and to include a full M&A cycle, the ideal time period for this study would start in January 2004. However, taking in consideration that the databases used only had data available starting from 2006, the time period for our sample encompasses the last 10 years, from January 2007 until December 2016.

Additionally, the selection of countries was made with the objective of including as many countries as possible. However, there are several different currencies among the countries in Europe. Thus, in order to facilitate the analysis, only countries whose official currency is the EUR throughout the entire sample period were selected. This selection encompassed 13 countries, more specifically Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovenia and Spain.

4.2. Data

Taking into account the time period and the countries stated above, the final sample was obtained with the following criteria, adapted from Andriosopoulos and Yang (2015):

- The acquiring firm must be headquartered in one of the aforementioned countries;
- The acquiring firm must be listed;
- The transaction is announced during the sample period and completed at the end of the sample period;
- The acquiring firm has equity ownership and financial records available on the Amadeus or Sabi database;
- Financial acquiring firms are excluded (2-digit SIC code 60-69);
- Deals with a value less than €0.1 million are excluded;

The final sample was comprised of 2038 M&A deals, of which 637 were domestic deals and 988 were cross-border deals.

All the data employed in this study was obtained from databases of the Bureau van Djik. The details of the M&A transactions were obtained from the Zephyr database while the firm-specific data (institutional ownership and financial data) was obtained from the Amadeus database and, in the specific case of some Portuguese firms, was obtained from the Sabi database.

4.3. Variables

Besides the definition of the sample, it is paramount to detail the variables that are employed in this study.

Regarding the institutional ownership variables, Andriosopoulos and Yang (2015) calculate the proportion of foreign institutional ownership, domestic institutional ownership and total institutional ownership as well as two different measures of institutional ownership concentration, the percentage shareholdings of the largest institutional ownership proportion and the cumulative five largest shareholdings held by institutional investors. These calculations are made in each firm at the fiscal year-end prior to the deal announcement and are the same calculations employed in this study.

However, Andriosopoulos and Yang (2015) also measure the investment horizon of institutional owners. Due to limitations in the databases available at FEP, this measure could not be employed. Instead, a different and more interesting measure regarding the different types of institutional investors is used.

Following Elyasiani and Jia (2010), the data on institutional investor ownership is divided into a pressure-insensitive group and a pressure-sensitive group. The authors state that the pressure-insensitive group includes investment companies and independent investment advisors while the pressure-sensitive group includes bank trust departments, insurance companies and others. Considering the classification of investors provided by the Bureau van Dijk (the entire shareholder classification can be seen in appendix A), the pressure-insensitive group in this study is composed by the

institutional investors classified as E or Y and the pressure-sensitive group is composed by the institutional investors classified as A or B.

A more comprehensive description of all the variables of the study can be seen in the following table.

Table 3 – Variables

Variables	Description
M&A Deal Variable	
Cross-Border Deal (CROSS_BORDER)	Binary variable equal to 1 if the acquiring firm engages in a cross-border deal and 0 otherwise
Institutional Ownership Variables	
Total Institutional Ownership (IO_TOTAL)	Total percentage shareholdings held by institutional investors in the acquiring firm at the year-end prior to the M&A announcement
Largest Institutional Investor (IO_LARGEST)	Percentage shareholdings held by the largest institutional investor in the acquiring firm at the year-end prior to the M&A announcement
Top 5 Institutional Ownership (IO_TOP5)	Aggregate percentage shareholdings held by the five largest institutional investors in the acquiring firm at the year-end prior to the M&A announcement
Foreign Institutional Ownership (IO_FOREIGN)	Aggregate percentage shareholdings held by foreign institutional investors in the acquiring firm at the year-end prior to the M&A announcement
Domestic Institutional Ownership (IO_DOMESTIC)	Aggregate percentage shareholdings held by domestic institutional investors in the acquiring firm at the year-end prior to the M&A announcement
Pressure-Sensitive Institutional Ownership (IO_PRESSURESENS)	Aggregate percentage shareholdings held by institutional investors classified as A or B (Bureau van Djik) in the acquiring firm at the year-end prior to the M&A announcement
Pressure-Insensitive Institutional Ownership (IO_PRESSUREINSENS)	Aggregate percentage shareholdings held by institutional investors classified as E or Y (Bureau van Djik) in the acquiring firm at the year-end prior to the M&A announcement
Domestic Pressure-Insensitive Institutional Ownership (IO_DOM_PRESSUREINSENS)	Aggregate percentage shareholdings held by institutional investors classified as E or Y (Bureau van Djik) in the acquiring firm at the year-end prior to the M&A announcement
Firm-specific Control Variables	
Firm Size (FIRM_SIZE)	Natural logarithm of the total assets of the acquiring firm at the year-end prior to the M&A announcement
ROA (FIRM_ROA)	Return on assets (ratio of net income to total assets) of the acquiring firm at the year-end prior to the M&A announcement
Leverage (FIRM_LEVERAGE)	Ratio of total debt to total assets of the acquiring firm at the year-end prior to the M&A announcement
Cash & Cash Equivalent (FIRM_CASH)	Ratio of cash and equivalents to total assets of the acquiring firm at the year-end prior to the M&A announcement
Capital Expenditure (FIRM_CAPEX)	Ratio of capital expenditures to total assets of the acquiring firm at the year-end prior to the M&A announcement
Intangible Assets (FIRM_INTANGIBLES)	Ratio of intangible assets to total assets of the acquiring firm at the year-end prior to the M&A announcement
Tobin's Q (FIRM_TOBINSQ)	Ratio of market value of equity to total assets of the acquiring firm at the year-end prior to the M&A announcement
M&A Deal Related Control Variables	
Cross Industry (DEAL_CROSSINDUSTRY)	Binary variable equal to 1 if the acquiring and the target firms have different 2-digit SIC codes and 0 otherwise
Listed Target (DEAL_LISTEDTARGET)	Binary variable equal to 1 if the target firm is a publicly listed firm and 0 otherwise
Initial Stake (DEAL_INITIALSTAKE)	Binary variable equal to 1 if the acquiring firm has an initial stake in the target firm prior to the M&A announcement and 0 otherwise
Cash Payment (DEAL_CASH)	Binary variable equal to 1 if the M&A deal employs cash only as a payment method and 0 otherwise
Financial Crisis (DEAL_FCRISIS)	Binary variable equal to 1 if the M&A deal is announced during the 2007-2008 crisis period and 0 otherwise
M&A Experience (DEAL_MAEXPERIENCE)	Binary variable equal to 1 if the acquiring firm has M&A experience prior to the M&A announcement and 0 otherwise

The table presents the full description of all the variables employed in this study, adapted from Andriosopoulos and Yang (2015).

4.4. Sample Description

Considering that this study investigates the impact of institutional investors in cross-border M&A, it is relevant to detail both the M&A deals included in the sample and the institutional shareholdings of the firms which initiate such deals. This section starts by describing the M&A deals, divided by year and by country, and proceeds to the description of the institutional shareholdings per country, finishing with the descriptive statistics of the institutional ownership variables.

Table 4 presents the annual distribution of the 2038 M&A deals of the sample. The total value of M&A deals is approximately €850 billion and a significant proportion of it (68.55%) is constituted by cross-border deals (approximately €582 billion). Even though the proportion of the number of cross-border deals regarding the total number of deals (59.37%) is moderately lower, it is clear that cross-border deals are more frequent and larger in size than domestic deals.

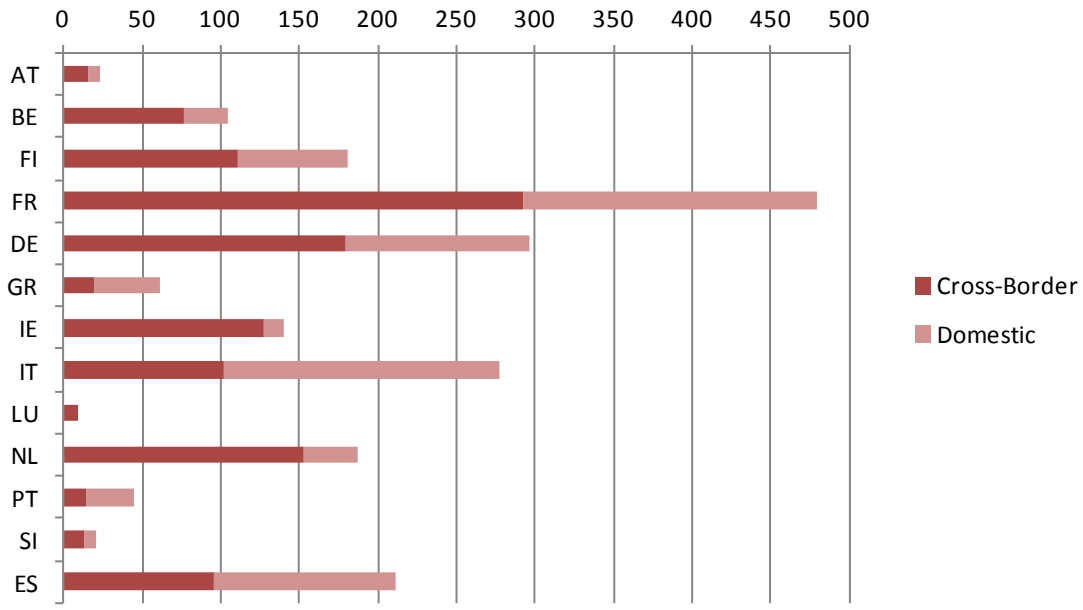
Table 4 – Annual Distribution of M&A

Year	Domestic		Cross-Border		Total	
	Number of Deals	Deal Size	Number of Deals	Deal Size	Number of Deals	Deal Size
2007	164	119,966,479.36	193	71,623,986.93	357	191,590,466.29
2008	116	19,259,980.10	174	67,581,936.45	290	86,841,916.55
2009	73	23,808,295.00	96	38,095,497.50	169	61,903,792.50
2010	82	13,546,812.61	100	31,176,549.44	182	44,723,362.05
2011	77	18,908,453.22	121	38,584,281.74	198	57,492,734.96
2012	73	12,631,306.81	109	23,278,882.32	182	35,910,189.13
2013	50	16,567,531.00	95	20,711,328.49	145	37,278,859.49
2014	62	19,122,790.91	131	156,733,266.16	193	175,856,057.07
2015	76	16,152,430.03	113	93,182,555.47	189	109,334,985.50
2016	55	7,005,489.44	78	40,925,957.46	133	47,931,446.90
Total	828	266,969,568.48	1210	581,894,241.96	2038	848,863,810.44

The table presents the annual distribution of M&A, partitioned by number of deals and deal size, for completed domestic and cross-border M&A initiated by firms from the countries included in the sample between 2007 and 2016. Deal size is the M&A deal value in thousands of EUR.

Furthermore, the distribution of the 2038 M&A deals initiated by the firms of each country is widespread. In the following figure, it is possible to see the differences between each nation.

Figure 2 – M&A Distribution per Country



The figure presents the total number of M&A, for completed domestic and cross-border deals initiated by the firms of each country included in the sample between 2007 and 2016. Each country is represented by its initials, which are defined in the glossary.

Figure 2 clearly displays that France is the country with the highest number of M&A in the sample, with French firms engaging in almost 500 deals throughout the selected period. On a lower level, Germany, Italy and Spain also exhibit a high deal activity, all of which with a number of deals between 200 and 300. Netherlands, Finland, Ireland and Belgium demonstrate a more moderate frequency of deals, with each of these countries attaining a number of deals between 100 and 200. On the bottom of the sample, Greece, Portugal, Austria, Slovenia and Luxembourg are the countries where M&A deals occur less frequently in the sample, with the last four showing less than 50 deals in the entire sample.

The figure also confirms that cross-border deals are more frequent than domestic deals. This is true for every country in the sample except for Greece, Italy and Portugal, in which domestic deals are more frequent, and also for Spain, in which the number of domestic deals and cross-border deals are roughly the same.

Regarding the institutional investors, the differences between institutional shareholdings in each country can be seen in the following table. It is important to notice that some

firms conduct more than one deal in the same year throughout the sample period; hence, it is logical that the ownership structure of such firms is only accounted once. This reason illustrates why the number of firms in the sample is different from the number of deals.

Table 5 – Institutional Shareholdings per Country

	IO_TOTAL (%)	IO_LARGEST (%)	IO_TOP5 (%)	IO_FOREIGN (%)	IO_DOMESTIC (%)	IO_PRESSURE SENS (%)	IO_PRESSURE INSENS (%)	Number of Firms
AT	18.48	3.51	10.08	16.50	1.98	11.53	6.95	23
BE	14.81	4.16	9.43	11.09	3.72	10.92	3.89	89
FI	28.00	6.41	16.03	11.63	16.37	15.65	12.35	161
FR	23.59	6.11	14.20	12.72	10.88	14.49	9.11	389
DE	20.53	6.32	13.32	14.10	6.43	13.90	6.63	256
GR	7.64	2.99	6.10	5.46	2.18	6.02	1.62	48
IE	38.88	7.52	21.12	36.51	2.37	21.15	17.73	86
IT	15.58	5.51	10.67	10.20	5.38	9.63	5.95	221
LU	11.88	1.94	5.76	11.85	0.02	9.03	2.85	7
NL	34.56	8.48	21.78	24.67	9.89	21.49	13.07	134
PT	15.82	5.93	12.75	9.45	6.37	11.78	4.04	37
SI	19.77	7.66	17.13	2.96	16.80	14.06	5.70	13
ES	24.55	8.79	17.31	12.01	12.53	17.68	6.87	161
All Countries	22.98	6.38	14.46	14.25	8.73	14.52	8.46	1,625

The table presents the mean values of the institutional ownership variables (except IO_DOM_PRESSUREINSENS) for each country included in the sample. The variables are defined in Table 2.

The countries which exhibit higher values of institutional ownership are Ireland, Netherlands and Finland while the countries which exhibit lower values of institutional ownership are Greece, Luxembourg and Belgium. The reported values are similar to the ones documented by Ferreira et al. (2010) and by Bena et al. (2016).

The descriptive statistics presented in the following table demonstrate that, in general, European firms exhibit lower values of institutional ownership than the UK (Andriosopoulos and Yang, 2015) and the U.S. (Bena et al., 2016). Moreover, foreign institutional shareholders are more prevalent than domestic institutional shareholders. If we look at the previous table, this is true for every country except Finland, Slovenia and Spain. Also, the group of pressure-sensitive investors is more prominent than the group of pressure-insensitive investors and this is verified in every single country. The full descriptive statistics broken down by country can be seen in appendix B.

Table 6 – Descriptive Statistics

	Mean	Median	Min	Max	Std Deviation	Number of Observations
IO_TOTAL	22.98	18.15	0.00	92.75	19.71	1,625
IO_LARGEST	6.38	4.99	0.00	63.18	7.34	1,625
IO_TOP5	14.46	11.77	0.00	69.37	12.42	1,625
IO_FOREIGN	14.25	9.08	0.00	87.58	15.77	1,625
IO_DOMESTIC	8.73	4.32	0.00	76.58	11.71	1,625
IO_PRESSURESENS	14.52	10.87	0.00	76.83	13.58	1,625
IO_PRESSUREINSENS	8.46	4.89	0.00	69.55	10.05	1,625

The table presents the descriptive statistics for the institutional ownership variables (except IO_DOM_PRESSUREINSENS) employed in this study. The variables are defined in Table 2.

Lastly, the correlation matrix regarding the institutional ownership variables can be seen in the next table. As expected, the variables exhibit a high correlation between them, considering that they all refer to institutional ownership.

Table 7 – Correlation Matrix

	IO_TOTAL	IO_LARGEST	IO_TOP5	IO_FOREIGN	IO_DOMESTIC	IO_PRESSURESENS	IO_PRESSUREINSENS
IO_TOTAL	1	0.60	0.88	0.80	0.60	0.88	0.77
IO_LARGEST	0.60	1	0.83	0.27	0.64	0.55	0.42
IO_TOP5	0.88	0.83	1	0.56	0.72	0.78	0.66
IO_FOREIGN	0.80	0.27	0.56	1	0.01	0.65	0.70
IO_DOMESTIC	0.60	0.64	0.72	0.01	1	0.61	0.36
IO_PRESSURESENS	0.88	0.55	0.78	0.65	0.61	1	0.38
IO_PRESSUREINSENS	0.77	0.42	0.66	0.70	0.36	0.38	1

The table presents the correlation matrix for the institutional ownership variables (except IO_DOM_PRESSUREINSENS) employed in this study. The variables are defined in Table 2.

4.5. Methodology

In this last section, the methodology of the study is described.

Firstly, in order to analyze the differences in institutional ownership and firm-specific characteristics between the domestic and cross-border M&A in the sample, a univariate analysis is conducted, as Andriosopoulos and Yang (2015) suggest.

This analysis is realized through a test of difference in means. This test measures if the mean of one sample is different than the mean of another sample. When the standard deviations of the population are not known, the two samples are independent[2] and the samples are taken from two normally or approximately normally distributed populations, the test of difference in means is performed with a t-test, with the following hypothesis:

$H0: \mu 1 - \mu 2 = 0$

$H1: \mu 1 - \mu 2 \neq 0$

The test assumes that the variances across the two samples are unequal. If the test rejects the null hypothesis, then the means of the two samples are different and can thus be compared (Bluman, 2009).

Moreover, the test of difference between medians is also performed. The test is similar to the test of differences in means and is performed to reinforce the results obtained with the test of difference between means.

After the univariate analysis, the regression analysis is performed. The probability of a European firm acquiring a cross-border target is estimated through a Probit regression in a panel dataset, again following Andriosopoulos and Yang (2015).

The sample selected for this study comprises several firms that acquire multiple targets in the same year, which represents a three-dimensional panel dataset. However, the software package Eviews does not allow the estimation of multidimensional panel datasets. Thus, in order to allow the estimation through the panel data methodology, a

[2] Samples are independent samples when they are not related, that is if the value of one sample does not affect the values in the other sample (Bluman, 2009)

slight modification of the observations is made. If a firm acquires more than one target in a given year, the mean values of the deal related variables are calculated (the institutional ownership and the firm specific values are always the same) and used in a single observation. This modification yields a sample of 637 domestic deals and 988 cross-border deals, in a total of 1,625 deals.

Moreover, there are several firms which engage in multiple M&A throughout the different years of the sample. Hence, the regression is also calculated using cluster-adjusted standard errors, following Petersen (2009), which allows the attainment of robust results and interpretations (Cameron et al., 2008).

The empirical model, adapted from Andriosopoulos and Yang (2015), is defined as:

$$
\begin{aligned}
P(CROSS\_BORDER_{i,t} = 1 | X) = \\
&= \Phi(c + \beta_1 IO\_TOTAL_{i,t} + \beta_2 IO\_LARGEST_{i,t} \\
&+ \beta_3 IO\_FOREIGN_{i,t} + \beta_4 IO\_PRESSUREINSENS_{i,t} \\
&+ \beta_5 FIRM\_SIZE_{i,t} + \beta_6 FIRM\_ROA_{i,t} \\
&+ \beta_7 FIRM\_LEVERAGE_{i,t} + \beta_8 FIRM\_CASH_{i,t} \\
&+ \beta_9 FIRM\_CAPEX_{i,t} + \beta_{10} FIRM\_INTANGIBLES_{i,t} \\
&+ \beta_{11} FIRM\_TOBINSQ_{i,t} \\
&+ \beta_{12} DEAL\_CROSSINDUSTRY_{i,t} \\
&+ \beta_{13} DEAL\_LISTEDTARGET_{i,t} \\
&+ \beta_{14} DEAL\_INITIALSTAKE_{i,t} + \beta_{15} DEAL\_CASH_{i,t} \\
&+ \beta_{16} DEAL\_FCRISIS_{i,t} \\
&+ \beta_{17} DEAL\_MAEXPERIENCE_{i,t} + \varepsilon_{i,t}) \qquad (3.5.1)
\end{aligned}
$$

where i refers to the firm and t refers to the year time period. The variable CROSS_BORDERi,t is the dependent variable and P(CROSS_BORDERi,t =1 | X) denotes the probability that a deal is a cross-border deal. Concerning the right side of the equation, Φ is the cumulative distribution function of the standard normal distribution and c is the constant term. The main explanatory variables are the institutional ownership variables IO_TOTALi,t, IO_LARGESTi,t, IO_TOP5i,t,

IO_FOREIGNi,t and IO_PRESSUREINSENSi,t and the parameters β are estimated through the maximum likelihood method. The firm specific variables and the M&A deal related variables are used as control variables, in order to allow more robust conclusions. Finally, εi,t is the error term (Wooldridge, 2013).

5. Empirical Results

In this chapter, the results of the empirical analysis are presented. The chapter is divided in three sections: the first section exposes the results of the univariate analysis between domestic and cross-border deals; the second section presents the results of the regression analysis; the third and final section displays the results of robustness tests.

5.1. Domestic vs. Cross-Border M&A

In order to obtain a more accurate description of the sample, the differences between institutional ownership and firm-level characteristics between domestic and cross-border M&A are analyzed. In the following table, the results of the univariate analysis between domestic and cross-border M&A are reported.

Table 8 – Univariate Analysis

Variables	Domestic			Cross-Border			Test of Difference in Means	Test of Difference in Medians
	N	Mean	Median	N	Mean	Median		
IO_TOTAL	637	17.79	12.57	988	26.33	22.28	(0.0000)***	(0.0000)***
IO_LARGEST	637	6.24	3.88	988	6.47	5.08	(0.5460)	(0.0000)***
IO_FOREIGN	637	9.16	4.64	988	17.54	12.96	(0.0000)***	(0.0000)***
IO_PRESSUREINSENS	637	6.38	2.67	988	9.80	6.19	(0.0000)***	(0.0000)***
FIRM_SIZE	637	15.09	15.04	988	14.38	14.31	(0.0000)***	(0.0017)***
FIRM_ROA	637	2.40	3.23	988	3.72	4.38	(0.0129)**	(0.0000)***
FIRM_LEVERAGE	637	0.61	0.61	988	0.57	0.57	(0.0345)**	(0.0028)***
FIRM_CASH	637	0.11	0.08	988	0.12	0.09	(0.1630)	(0.0857)*
FIRM_CAPEX	637	0.06	0.04	988	0.06	0.04	(0.0301)**	(0.1279)
FIRM_INTANGIBLES	637	0.23	0.20	988	0.24	0.22	(0.1586)**	(0.1643)
FIRM_TOBINSQ	637	0.86	0.59	988	1.09	0.81	(0.0000)***	(0.0000)***

The table presents descriptive statistics of the institutional ownership and firm-specific variables employed in equation (3.5.1) for two sub-groups of firms: firms engaging in domestic M&A and firms engaging in cross-border M&A. The variables are defined in Table 3. The test of difference in means (medians) reports the p-values for the homogeneity test for means (medians) assuming unequal variances across the two sub-groups. Statistical significance is represented by * at 10%, ** at 5% and *** at 1%.

The results show that institutional shareholders hold statistically larger stakes in firms conducting cross-border M&A (26.33%) than firms conducting domestic M&A (17.79%). The institutional ownership is also more concentrated in firms engaging in cross-border deals, given that the largest institutional ownership is statistically larger in cross-border deals (15.71%) than domestic deals (12.52%). This suggests that

institutional shareholders may have an important influence in the decision to engage in cross-border M&A.

Moreover, firms acquiring foreign targets exhibit larger stakes held by foreign institutional investors (17.54%) than firms acquiring domestic targets (9.16%). These results suggest that, among institutional investors, foreign shareholders may have a more active role in encouraging cross-border M&A than domestic shareholders.

Regarding the type of institutional investors, firms targeting foreign companies show statistically higher levels of both pressure-sensitive and pressure-insensitive institutional investors, consistent with the total higher institutional shareholdings in this group.

Interestingly, the results on firm-specific characteristics demonstrate that firms engaging in domestic deals are bigger and slightly more leveraged than firms engaging in cross-border deals. On the contrary, firms engaging in cross-border deals exhibit higher profitability and higher stock valuation than firms engaging in domestic deals.

5.2. Determinants of Cross-Border M&A

The regression equation was run in EViews using the Binary Choice Probit estimation method. The following table presents the estimation output.

Table 9 – Estimation Output of Equation 5.3.1.

Variable	Coefficient
C	0.583672** (0.252428)
IO_TOTAL	0.01166*** (0.004193)
IO_LARGEST	-0.021406*** (0.006377)
IO_FOREIGN	0.016921*** (0.004321)
IO_PRESSUREINSENS	-0.006188 (0.005577)
FIRM_SIZE	-0.040965***

	(0.011148)
FIRM_ROA	-0.001078
	(0.003333)
FIRM_LEVERAGE	-0.269312***
	(0.102648)
FIRM_CASH	-0.610224**
	(0.309554)
FIRM_CAPEX	-0.872218
	(0.533569)
FIRM_INTANGIBLES	-0.220284
	(0.185869)
FIRM_TOBINSQ	0.14129***
	(0.036274)
DEAL_CROSSINDUSTRY	-0.08889
	(0.07006)
DEAL_LISTEDTARGET	0.258874
	(0.182046)
DEAL_INITIALSTAKE	-0.414223***
	(0.080332)
DEAL_CASH	0.366488***
	(0.085886)
DEAL_FCRISIS	-0.088202
	(0.075563)
DEAL_MAEXPERIENCE	0.29845**
	(0.145514)

Obs.	1625
Pseudo R^2 (%)	10.27
LR Statistic	223.4748
Prob (LR statistic)	0.0000
Wald Chi^2	94.5
p-value Wald test	0.0000
Correctly classified (%)	68.62

The table presents the results of the probit regression for estimating the probability of a European firm acquiring a cross-border target. The dependent variable is the variable CROSS_BORDER, as defined in Table 3. All other variables are defined in Table 3. Robust standard errors following Petersen (2009) are reported in parenthesis under each coefficient. Statistical significance is represented by * at 10%, ** at 5% and *** at 1%. Correctly classified (%) compares the fitted and actual values based on a 0.50 cut-off point.

The likelihood ratio test provides evidence that this model is globally statistically significant. The Pseudo R-Squared of a Probit model is closely related to the R-Squared

from OLS estimation; thus, it is possible to conclude that 10.27% of the variance regarding the probability of a European firm acquiring a foreign target is explained by the contributions of the independent variables. Also, the model correctly predicts 68.62% of its previsions. The Wald test, performed for the main explanatory variables, rejects the null hypothesis of insignificance in the model, which means that the variables can jointly predict the probability of a cross-border deal (Wooldridge, 2013). These measures suggest a high reliability and accuracy of the explanatory variables.

Regarding the estimates, three of the four main explanatory variables are statistically significant. The results show that a higher percentage of total institutional ownership has a positive and significative influence on the likelihood of a cross-border M&A, implying that the probability of a firm acquiring a foreign target increases by 1.2% if the total institutional ownership rises 1%, other things being equal. This finding is consistent with Andriosopoulos and Yang (2015) and Zhou et al. (2016) who argue that institutional investors play an active role in the firm's decision-making and corporate strategies and have, in fact, effective monitoring skills.

Contrary to Andriosopoulos and Yang (2015), it was found evidence that the largest institutional shareholder exerts influence on the acquisition decision. Considering that in cross-border deals, acquirers pay a lower premium (Goergen and Renneboog, 2004) and may experience significant gains in its stock price (Chari et al., 2010), the influence of the largest shareholder should be positive. However, the evidence indicates that the largest investor is averse to engaging in cross-border M&A, as the probability of a firm acquiring a foreign target decreases by 2.1% if the largest institutional shareholding rises 1%, other things being equal. This implies that cross-border M&A may potentially distort the existing corporate governance dynamics and the influence the largest shareholder exerts, as Andriosopoulos and Yang (2015) reason regarding large deals.

Furthermore, it is possible to conclude that foreign institutional ownership has a positive and significative influence on the likelihood of a cross-border M&A. The results demonstrate that the probability of a firm acquiring a foreign target increases by 1.7% if the foreign institutional ownership rises 1%, other things being equal. This finding is consistent with Ferreira et al. (2010) and Andriosopoulos and Yang (2015),

who state that foreign institutional investors act as facilitators in the international market for reducing transaction costs and information asymmetries.

No evidence was found on the influence of the pressure-insensitive institutional investors on the likelihood of a cross-border M&A. One possible reason to explain this result is advanced by Gillan and Starks (2003), who suggest that foreign institutional investors belong to the group of pressure-insensitive investors because they have fewer business relations with the firms they invest in. Hence, considering that the influence of foreign investors is already being accounted for in the model, it is possible that the effect of the pressure-insensitive institutional investors is not being properly captured.

Regarding the firm-specific control variables, the results illustrate that firm size, leverage and liquidity have a negative influence on the probability of acquiring a cross-border target whereas Tobin's Q wields a positive influence. As for the deal-related control variables, cross-border M&A are more likely to occur if the acquiring firm does not hold any stake in the target firm prior to the deal, if the payment method is through cash and if the acquiring firm has prior M&A experience.

Overall, it is possible to conclude that institutional investors have an important impact on the decision to engage in cross-border M&A.

5.3. Robustness Checks

In this section, three alternative approaches are presented in order to verify the results obtained with the estimation.

Taking into account that the sample encompasses several countries, it is meaningful to understand if there are any country effects in the estimation. Thus, the regression equation is estimated with 12 additional dummy variables, each variable taking the value of 1 if the acquiring firm is from the country in question and 0 otherwise. In addition, the sample also covers several industries, divided by the SIC code major groups. Following the same reasoning as before, the regression equation is estimated with another additional 7 dummy variables, each variable taking the value of 1 if the acquiring firm is from the industry in question and 0 otherwise.

Also, considering that the largest institutional investor has a negative influence on the probability of acquiring a foreign firm and with the objective of providing a better understanding of the influence of institutional ownership concentration, the variable regarding the largest institutional investor is substituted in the regression equation by the cumulative five largest shareholdings, as Hartzell and Starks (2003) suggest.

Moreover, accounting for the case of the pressure-insensitive group including the foreign investors, the variable regarding the pressure-insensitive institutional investors is replaced by a variable concerning only the domestic pressure-insensitive institutional investors in the regression equation.

The following table presents the estimation output of these alternative approaches. The regression equation with the country and industry controls is displayed on column 1. On column 2, the regression equation with the top 5 institutional shareholders instead of the largest institutional investor is presented. On column 3, it is shown the regression equation with the domestic pressure-insensitive institutional investors instead of the entire group of pressure-insensitive institutional investors.

Table 10 – Robustness Checks of Equation 5.3.1.

Variable	Coefficient		
	(1)	(2)	(3)
C	-0.652202**	-0.646506**	-0.636748**
	(0.316407)	(0.318996)	(0.319542)
IO_TOTAL	0.009571**	0.016715**	0.010668**
	(0.004469)	(0.006598)	(0.005084)
IO_LARGEST	-0.01539**		-0.016501**
	(0.006708)		(0.00687)
IO_TOP5		-0.017788**	
		(0.007327)	
IO_FOREIGN	0.015105***	0.0137***	0.010299**
	(0.004765)	(0.005002)	(0.005535)
IO_PRESSUREINSENS	-0.008982	-0.008129	
	(0.005893)	(0.005922)	
IO_DOM_PRESSUREINSENS			-0.010274
			(0.008079)

FIRM_SIZE	0.025604*	0.026586*	0.024768
	(0.015557)	(0.015663)	(0.015703)
FIRM_ROA	-0.002331	-0.002453	-0.001955
	(0.003457)	(0.00349)	(0.003494)
FIRM_LEVERAGE	-0.197542*	-0.204937*	-0.195204*
	(0.108766)	(0.109718)	(0.109779)
FIRM_CASH	-0.563155*	-0.55152	-0.577564*
	(0.332879)	(0.335306)	(0.335723)
FIRM_CAPEX	-0.7447	-0.757625	-0.755529
	(0.551697)	(0.554883)	(0.556604)
FIRM_INTANGIBLES	-0.17432	-0.182463	-0.173124
	(0.208613)	(0.210722)	(0.210625)
FIRM_TOBINSQ	0.148763***	0.149334***	0.148155***
	(0.038019)	(0.038333)	(0.038404)
DEAL_CROSSINDUSTRY	-0.08458	-0.088419	-0.082636
	(0.073806)	(0.074571)	(0.074463)
DEAL_LISTEDTARGET	0.341373*	0.370093**	0.343961*
	(0.184511)	(0.185792)	(0.186319)
DEAL_INITIALSTAKE	-0.357099***	-0.367792***	-0.356875***
	(0.083696)	(0.084429)	(0.084531)
DEAL_CASH	0.309248***	0.303253***	0.309602***
	(0.089053)	(0.089989)	(0.089965)
DEAL_FCRISIS	-0.069453	-0.057241	-0.067865
	(0.078713)	(0.079535)	(0.079422)
DEAL_MAEXPERIENCE	0.286418*	0.288641*	0.287669*
	(0.152835)	(0.154039)	(0.154533)
Country Controls	Yes	Yes	Yes
Industry Controls	Yes	Yes	Yes
Obs.	1625	1625	1625
Pseudo R^2 (%)	15.18	15.21	15.15
LR Statistic	330.3300	331.0492	329.6698
Prob (LR statistic)	0.0000	0.0000	0.0000
Wald Chi^2	54.59	54.52	52.83
p-value Wald test	0.0000	0.0000	0.0000
Correctly classified (%)	69.85	70.22	70.15

The table presents the results of probit regressions for estimating the probability of a European firm acquiring a cross-border target. The dependent variable is the variable CROSS_BORDER, as defined in Table 3. All other variables are defined in Table 3. Robust standard errors following Petersen (2009) are reported in parenthesis under each coefficient. Statistical significance is represented by * at 10%, ** at 5% and *** at 1%. Correctly classified (%) compares the fitted and actual values based on a 0.50 cut-off point.

All approaches wield similar results regarding the global statistical significance of the model, with only marginal differences comparing to the main empirical model.

After controlling for country and industry effects, the results of the main empirical model still hold, as is demonstrated in column 1. It can be concluded that the effects of institutional ownership in cross-border M&A are valid across all countries and industries in the sample.

The results in column 2 demonstrate that the influence of the 5 largest shareholders is negative and significant, with the probability of a firm acquiring a foreign target decreasing by 1.7% if the 5 largest institutional shareholdings rise 1%, other things being equal. This result is very similar to the result obtained in the main empirical model, when the estimation is run with the largest institutional shareholding. Thus, it becomes clear that the influence of the largest institutional shareholders is contrary to the influence of the entire institutional shareholders.

Column 3 demonstrates that no evidence was found on the influence of the domestic pressure-insensitive institutional investors on the likelihood of a cross-border M&A. Hence, it is possible to conclude that the type of institutional investors does not influence the decision of an acquirer targeting a cross-border or a domestic firm.

In general, these robustness checks provide evidence that the results of the main empirical model maintain its validity.

6. Conclusions

The present study examines the impact of institutional investors on the probability of firms from the Euro Area engaging in cross-border mergers and acquisitions. In order to provide a greater insight into institutional ownership effects, measures of ownership concentration and types of institutional investors were employed alongside the overall institutional ownership. To allow for more robust results, firm-specific and deal-specific characteristics and country and industry effects were also accounted for.

The evidence found suggests that the total institutional shareholdings and the foreign institutional shareholdings increase the probability that a Eurozone firm chooses to acquire a foreign target while a higher institutional ownership concentration decreases such probability. No evidence was found regarding the type of institutional investors.

The results on total and foreign institutional ownership are in line with the previous studies on this topic and indicate that institutional investors are effective monitors of a firm's management and exert a significative influence on a firm's decision making; the results also indicate that foreign institutional investors act as facilitators for reducing transaction costs and information asymmetries in international markets. On the other hand, the results on institutional ownership concentration suggest that cross-border M&A can potentially distort the existing corporate governance dynamics and the influence the largest shareholders exert. This study has significant contributions for the literature considering that, to the best of the author's knowledge, this is the first study to focus solely on European countries. Even though it is a relevant topic, the majority of the evidence is focused on the U.S., the U.K. and China and concerns the institutional ownership on target firms instead of acquiring firms. Hence, this study partially fills this literature gap.

This study has one important limitation that must be mentioned. Several authors argue that an active and large stock market may inherently attract large and foreign institutional investors, which may result in a potential endogeneity bias in the estimations. The endogeneity was not accounted for in this study due to data limitations and it must be considered that the results may be different, even though in the prior literature the endogeneity adjustments only reinforce the results previously obtained.

Regarding future research suggestions, to overcome the aforementioned limitation, it would be valuable to test if endogeneity is present in the sample and, if it is, to correct it, in order to provide even more robust results. Finally, it would also be interesting to conduct the same investigation in other countries, particularly in emerging economies, to understand if the effects found hold.

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Appendices

Appendix A

Classification	Shareholder Type
A	Insurance Company
B	Bank
C	Trade and Industry Organisation
D	Nameless private stockholders, aggregated
E	Mutual and Pension Fund
F	Financial Company
I	One or more named individuals or families
J	Foundation / Research Institute
L	Other named shareholders, aggregated
M	Employees/Managers/Directors
P	Private Equity Firms
S	Public Authority / State / Government
V	Venture Capital
Y	Hedge Funds
Z	Public

The table presents the classification of the type of shareholder of the Bureau van Dijk databases. Source: Bureau van Dijk

Appendix B

	All Countries	Austria	Belgium	Finland	France	Germany	Greece	Ireland	Italy	Luxembourg	Netherlands	Portugal	Slovenia	Spain
Total Institutional Ownership														
Mean	22.98	18.48	14.81	28.00	23.59	20.53	7.64	38.88	15.58	11.88	34.56	15.82	19.77	24.55
Median	18.15	13.20	11.49	26.92	19.26	17.05	3.82	43.12	12.14	8.05	36.00	13.56	14.11	20.04
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	1.43	0.00
Max	92.75	74.83	80.88	82.19	92.75	79.32	36.69	87.58	77.57	35.32	87.68	35.72	52.07	83.54
Std. Deviation	19.71	18.67	14.49	19.77	19.48	18.24	9.03	24.34	14.56	12.49	22.28	10.01	18.77	18.50
Largest Institutional Investor														
Mean	6.38	3.51	4.16	6.41	6.11	6.32	2.99	7.52	5.51	1.94	8.48	5.93	7.66	8.79
Median	4.99	3.71	2.81	5.34	4.95	4.57	1.66	7.07	2.77	1.45	6.34	5.38	5.59	5.73
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.78	0.00
Max	63.18	9.20	44.66	50.70	56.00	48.71	20.11	23.58	63.18	4.89	49.93	19.98	26.09	54.68
Std. Deviation	7.34	2.75	5.95	5.63	6.63	7.99	3.72	4.54	8.28	1.43	8.12	4.56	7.82	9.64
Top 5 Institutional Ownership														
Mean	14.46	10.08	9.43	16.03	14.20	13.32	6.10	21.12	10.67	5.76	21.78	12.75	17.13	17.31
Median	11.77	6.31	6.43	15.37	11.69	10.95	3.40	21.43	7.35	3.69	21.12	13.32	12.34	15.23
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	1.43	0.00
Max	69.37	29.68	63.88	50.70	68.70	66.65	23.37	60.79	69.37	16.62	61.58	32.07	41.86	68.71
Std. Deviation	12.42	8.95	9.77	11.00	11.81	12.06	7.08	12.61	10.83	5.23	15.26	7.52	16.39	13.38
Foreign Institutional Ownership														
Mean	14.25	16.50	11.09	11.63	12.72	14.10	5.46	36.51	10.20	11.85	24.67	9.45	2.96	12.01
Median	9.08	10.58	7.59	7.37	8.47	9.68	1.68	36.52	6.96	8.05	21.65	7.91	1.60	7.37
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.12	0.00
Max	87.58	73.80	67.18	45.25	82.43	66.87	29.29	87.58	58.71	35.32	82.67	29.12	15.42	61.43
Std. Deviation	15.77	18.24	12.42	12.04	13.30	14.78	7.58	24.67	11.32	12.51	19.23	8.21	4.19	13.49
Domestic Institutional Ownership														
Mean	8.73	1.98	3.72	16.37	10.88	6.43	2.18	2.37	5.38	0.02	9.89	6.37	16.80	12.53
Median	4.32	1.19	2.27	12.75	7.33	4.03	0.45	0.00	1.64	0.00	3.89	4.74	13.46	7.24
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.00
Max	76.58	8.49	30.00	72.07	63.28	57.80	20.38	19.91	64.83	0.16	56.23	18.92	43.61	76.58
Std. Deviation	11.71	2.06	5.20	14.26	12.02	8.89	3.92	4.68	9.75	0.06	12.55	5.95	17.03	14.66
Pressure-Sensitive Institutional Ownership														
Mean	14.52	11.53	10.92	15.65	14.49	13.90	6.02	21.15	9.63	9.03	21.49	11.78	14.06	17.68
Median	10.87	8.42	8.99	14.77	10.76	10.76	3.33	23.33	7.09	5.87	20.70	10.45	8.83	13.14
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	1.43	0.00
Max	76.83	39.16	62.66	53.13	64.17	63.63	28.86	48.29	50.82	27.35	60.83	33.47	51.72	76.83
Std. Deviation	13.58	10.34	10.84	12.76	13.22	13.80	7.45	14.24	10.25	9.80	15.70	8.35	15.44	15.80
Pressure-Insensitive Institutional Ownership														
Mean	8.46	6.95	3.89	12.35	9.11	6.63	1.62	17.73	5.95	2.85	13.07	4.04	5.70	6.87
Median	4.89	2.37	2.25	10.71	5.98	3.82	0.26	16.53	3.05	1.88	10.27	2.25	3.06	4.14
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00
Max	69.55	35.67	23.44	50.48	62.53	36.01	9.78	69.55	66.41	7.97	65.79	17.19	19.75	41.75
Std. Deviation	10.05	9.57	4.99	9.94	9.94	7.90	2.58	14.75	9.08	2.90	12.26	4.46	6.53	8.19
Number of Firms	1,625	23	89	161	389	256	48	86	221	7	134	37	13	161

The table presents the full descriptive statistics of all the institutional ownership variables (except IO_DOM_PRESSUREINSENS) broken down by each country included in the sample. All variables are defined in Table 2.